

Fire Building

A simple fire during camp gives us warmth and comfort, and at often times helps to reinforce our spirits. It draws us towards its warmth and light giving us security. Some time ago, a small flame could have been the difference between life and death. Today, more often than not, a fire is build not because of necessity, but by our own choice to have one for our enjoyment. As Scouts, we should be responsible enough whenever making a campfire for little camp program or for cooking.

Low-Impact Scouting



Scouts should be aware of our responsibility to preserve our environment so that future generations may enjoy them the way we are enjoying it right now. If building a campfire means we will be adding another burn scar on the land, a Scout should be able to be selfless and forego of the pleasure. Today, there are a number of cooking stoves using clean fuel. Using these portable cooking stoves is the best option over a cooking fire.

At times, setting up a campfire or cooking fire is necessary. Selecting and preparing the site of the campfire is quite important to our low-impact method. Some campsites may have ready pits specifically for campfires and cooking fires. After using the selected site, it should be cleaned properly so that there will be minimum sign of land use and no chances for the site to reignite.

Elements of a Fire

The *Fire Tetrahedron* shows the four elements required for combustion to occur. To have combustion you must have *oxygen*, *heat*, *fuel*, and a *chemical reaction* of the other three elements.

The environment requires 16% of oxygen to be present to serve into the reaction. Air is normally composed of 21% oxygen and some materials contain enough oxygen in them to support burning.

A heat source can be a lot of things. A material does not need to be in direct contact of flame to combust. An open flame close enough can provide enough heat to be a heat source to start a fire. One such example is our very own sun. The sun can ignite a fire in the forest if the dried leaves are dry enough to start a chemical reaction of combustion with the heat of the sun. Hot surfaces such as a kettle can also start combustion given the right combination of elements.



The fuel can be a lot of things as well. They can be in gaseous, solid, or liquid form. Gases can include propane, butane, and hydrogen. You have gasoline as liquid (and its gaseous form), kerosene, alcohol, and other flammable liquids. For solids you have coal, wood, leaves, leather, and more.

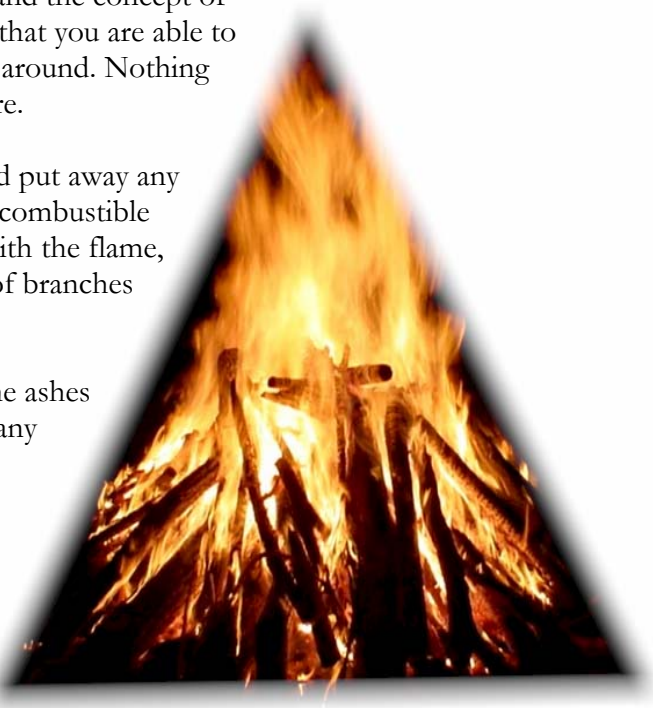
Your Fire Site

As the one building the fire, you should understand the concept of the fire tetrahedron. You should make it a habit that you are able to control the fire you make and not the other way around. Nothing should burn other than the fuel you feed your fire.

Whenever possible, select an existing fire site and put away any other material that might burn. Remember, that combustible materials do not need to be directly in contact with the flame, it only needs heat to combust. Clearing the site of branches and leaves will provide a measure of control.

After using a fire you must extinguish it cold. The ashes should be cold enough such that you can touch any part of the fire lay with your hands safely.

If you are starting a fire on grassy land, you can use a shovel to cut out a 2-foot wide square of the soil. Lift it out gently and keep it under a shade. Sprinkle it with water and keep the grass fresh. You can use the spot where you cut out the soil as a fire site. After using and thoroughly cleaning the fire site, you place the square soil back into its spot.



Cleaning the Site

Bury the ashes of your fire whenever possible, but never dig a new hole just to bury the ashes. Take apart the fire ring by spreading it on the immediate area. Blackened rocks should be scattered around with its blackened-side facing the ground. Replace any ground cover you've removed and extra fire woods you have collected should be tossed away. Sometimes it would be courteous to bundle up the firewood and place it near the fire site for others to use, if the site is an established fire site.

Building Your Fire

A matchstick would easily burn with a small flame, but you won't be able to burn through a thick log with only a match-stick in your hand. There are three types of materials that will be needed to build your fire.

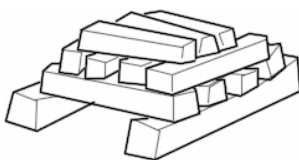
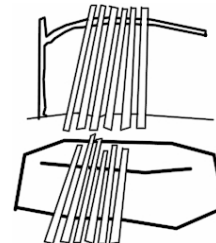
- **Tinder** catches fire easily and burns as fast as it catches it. Wood shavings, dry grass, shredded bark, and even paper make up good tinder. To start your fire you will need approximately a hat-full of tinder.
- **Kindling** catches fire fairly easy and burns a little bit slower than tinder. A pencil can be considered as kindling and you will need two hat-full of kindling for your fire.
- **Fuel** can be a piece of stick as thick as your thumb and can go as thick as your thigh, depending on the fire you wish to build.

Different Fire Lays



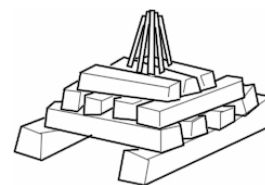
Teepee Fire Lay. Place a handful of tinder on the middle of the ring. On the tinder place your kindling to form a small teepee. Your fuel should be placed in such a way that the top of the fuel touches the top of the other fuels. The fuel should be arranged around the kindling. Leave an opening on one side of the teepee to serve as the opening to light your fire.

Lean-To Fire Lay. A handful of tinder will do. Place kindling on top of the tinder. Have a thick wood or big stone and place it on the far side of the tinder and kindling (not too far) parallel to the wind direction. Lean your intended fuel on to the thick wood or big stone, over your kindling and tinder. Start your fire from the side of the fire lay.



Crisscross Fire Lay. Place two thick woods parallel to each other (as parallel as possible). The position of the two woods should be parallel to the wind direction. Between the two woods placed in the handful of tinder and place the kindling on top of it. Lay in your first set of fuel parallel to each other but perpendicular to the two thick woods you placed in earlier. The second set of fuel should be placed in the same manner but parallel to the two thick woods. Alternate the manner of laying for succeeding set of fuel.

Council Campfire Fire Lay. As the name implies, this type of fire lay is used in Scouting campfire ceremonies. It is basically a combination of two types of fire lays, the teepee and the crisscross. Tinder and kindling are placed inside the teepee which is on top of the crisscross. Lighting of the fire is done on the teepee and not on the crisscross.

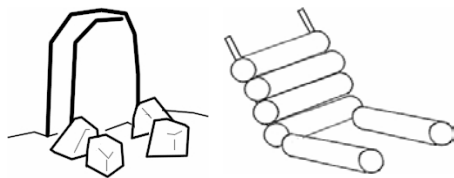
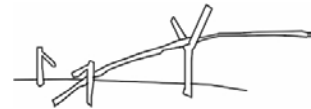


Different Fire Places



Camper Fireplace. Used for grilling your food like fish and chicken. The stick to be used to hold your food should be green or fresh wood, to prevent it from catching fire. The extra 'Y' stick is used to hold the straight stick when you want to hold on to cooked food.

Crane Fireplace. Used to hold kettles and pots for boiling your water or other cooking needs. An extra crane holder should be provided to easily move the kettle or pot out of the cooking fire.



Reflector Fireplace. Used when cooking in windy conditions. The design serves as a wind breaker to reflect the wind, effectively preventing strong winds from extinguishing the fire. Stones and logs can be used for this purpose.

Trench Fireplace. Allows cooking on windy conditions without the need to construct a reflector. It also allows you to partially hide the cooking place by replacing the soil into the trench.



References

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